B4 opening of the transistor by emission of holes from gates to lightly doped area and accumulation of holes. At a closing one by discharge of holes (extraction).

"paragraph 0010" Though the structure of the transistor is symmetric the operating duty of the channel that is near the drain of the transistor essentially differs from the operating duty of the channel that is near its source. The electrical field reduces the concentration of holes in the former and increases their concentration in the latter. Owing to this, the hole concentration along an axis perpendicular to surface is trapezioidal in zero approximation. It puts certain restrictions both on the design parameters of BSIT and on designing of circuits in which these transistors are applied. Algorithm of control of the offered transistor (offered) under typical circumstances is more complicated than that of the transistor described above ([1]) [2]. To achieve optimum characteristics three rather than two different levels voltages should be applied to the transistor gates. One of (the) voltages to the gate is about zero relatively to the nearby source, with the transistor channel closed, gate extract holes, while the voltage applied to the gate near the drain should be about 0.4 V with the channel slightly open and the gate emit(ting) very low hole current to the channel and the lightly doped area. When changing polarity of the voltage applied, the source and the drain change places, and (the) voltages to (the) gates should be changed accodingly so as transistor is to remain closed. In this case the transistor can maintain voltages up to several kilovolt depending on parameters of the lightly doped area. Another voltage on (the) gates is about 0.8 V relatively of the (sourse) source and the drain which are nearby. It provides the opening of (the) channels and hole emission to the lightly doped area. The emission of holes to the lightly doped area is followed by electrons from the transistor source which makes the hole concentration and electron concentration (practically) the same in the zero approximation and may reach the magnitude of 10.sup.17 10.sup.18 cm.sup.-3; resistance of the transistor drops abruptly (sharply) due to conductivity modulation and the voltage between the drain and the source of the transistor does not exceed 0.5 V at current density 1000 a cm.sup.-2. (The level of 0.4 V can be substituted by) There is a smoothly lowering voltage on the gate which is near the source of the transistor during the switching of the transistor from on-condition to off-condition, owing to extraction.

"between paragraph 0010 and 0011" In pulse duty current density can be bigger in some times, aspiring to 10000 a cm.sup.-2. In this case hole concentration approximately the same in whole lightly doped area. Influence diffusion currents are negligible. Offered transistors, as the transistor [2], can control over power bigger than any other types transistors all over the world.

B6

"paragraph 0015" Apart from the main purpose of application, that is using the (transistor) device as a completely controlable power bidirectional key, (similar structure) device can be used (for other purposes; to achieve these purposes, both the control of emission and of extraction of holes into lightly doped area are used, as well as current feedback for the control of emission (for example, latch when manufacturing a switchboard)) as thyristor. Current feedback controls of the hole emission from gate, which is near drain of device, if the channel is lightly doped one.

B7

"paragraph 0020" Fig.(1) 3 represents a bipolar static induction (transistor) thyristor structure.

B8

"between paragraph 0020 and paragraph 0021" Fig.4 represents a power (normally-off transistor) thyristor structure with two lowpower normally-on transistors.

B9

"paragraph 0023" The bipolar static induction (transistor) thyristor fig.3 comprises lightly doped n-type substrate (1) 21, gate electrodes (2) 23, gates (3) 22, source and drain electrodes (n.sup.+-type polysilicon) (4) 26, (drain electrode 5) source and drain contacts 27, channels (6) 25, source and drain (7) 24.

"between paragraph 0023 and 0024" The bipolar static induction (transistor) thyristor fig.4 comprises lightly doped n-type substrate 28, gates 29, gate electrodes 30, thiick channels 31, thick channel electrodes 32, source and drain 33, channels 34, source and drain electrodes (n.sup.+-type polysilicon) 35, source and drain contacts 36, thick channel contacts 37.

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